INSTRUCTIONS
FORM F11a
FUGITIVE DUST-ROADS

Department of Environmental Quality
Division of Air Quality
P.O. Box 144820
Salt Lake City, UT 84114-4820
Telephone (801) 536-4000

DAQ ID	For Office use only.
Pt. Source ID	Provide identification number for each process.
SCC	Enter the appropriate Source Classification Code (SCC). See the General Instructions for explanation.
Road Description	Give a description of the road. Example: haul road, access road, etc.
Road Type	List the type of the road. Example: dirt, gravel, or paved.
Public/Private Road	List whether or not road usage is on public or private roads.
Vehicle Miles Traveled/year	Give vehicle miles traveled over these roads per year. Values should include all company usage.
Avg. Vehicle Speed	Provide the vehicle average travel speed over the road in miles per hour.
Control Method Code	Use the following control codes for dust suppression: 000 None. 061 Water spray. 062 Chemical stabilization 099 Others (please specify in the Comment column).
% Control Efficiency	Percent of control by watering or other treatment.
# of Applications	List the number of applications per year used to stabilize road surface.
% Silt Content	Percent of silt content of the road surface material.
Loaded Vehicle Weight	Utah Department of Transportation (UDOT) limitation for highway travel.
Empty Vehicle Weight	UDOT limitation minus normal load.
Mean # of Wheels	Provide the average number of wheels per vehicle.
Emissions	Enter the estimated or calculated emissions in tons per year. **Provide complete calculations on a separate sheet**.
Emission Code	Provide the valid method code for quantifying actual emissions of each pollutant. The valid method codes are

listed in Table 5 of the General Instructions. These are the only codes which will be accepted. If the Estimate Code 8 (AP-42 factors) is used, please provide the section number of AP-42 in the Comment column.

Emission Factor — Provide the emission factors of AP-42 in used in the calculations.

Units — Appropriate units associated with the emission factor.

Suggested Equations

Unpaved Roads On Site

$$E.F = k\left(\frac{s}{12}\right)^{0.9}\left(\frac{W}{3}\right)^{0.45}$$

Where:

E.F. = Emission Factor (lbs/VMT)
k = Particle size multiplier ($PM_{2.5}$: 0.23 and PM_{10}: 1.5)
s = Silt content of surface (entered as %, i.e. 5 rather than 0.05)
W = Mean vehicle weight (tons)

Unpaved Roads Public

$$E.F. = \frac{k\left(\frac{s}{12}\right)\left(\frac{W}{30}\right)^{0.5}}{\left(M/0.5\right)^{0.2}} - C$$

Where:

E.F. = Emission Factor (lbs/VMT)
k = Particle size multiplier ($PM_{2.5}$: 0.27 and PM_{10}: 1.8)
s = Silt content of surface (entered as %, i.e. 5 rather than 0.05)
W = Mean vehicle weight (tons)
M = Surface material moisture content (%)
S = Mean vehicle speed (mph)
C = Emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (PM2.5: 0.00036 and PM10: 0.00047)

*Reference: AP-42 Section 13.2.2

Paved Roads

$$E.F. = k\left(\frac{sL}{2}\right)^{0.65} x\left(\frac{W}{3}\right)^{1.5} - C$$

E.F. = Particulate emission factor (having lb/VMT)
k = Particle size multiplier for particle size range and units of interest (PM_{10}: 0.016 and $PM_{2.5}$: 0.0040)
sL = Road surface silt loading (grams per square meter) (g/m^2)
W = Average weight (tons) of the vehicles traveling the road
C = Emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (PM10: 0.00047 and PM2.5: 0.00036)

*Reference: AP-42 Section 13.2.1